CLAIMS

1.   A method for preventing and/or treating a bone-related disease in a mammal in need of such treatment, wherein said method comprises:
      administering to said mammal an effective amount of a pharmaceutical composition comprising at least one GSK-3β inhibitor.

2.   A method for preventing and/or treating a bone-related disease in a mammal in need of such treatment, wherein said method comprises:
      administering to said mammal a pharmaceutically effective amount of at least one GSK-3β inhibitor.

3.   The method according to claim 1 or 2, wherein said mammal is a human.

4.   The method according to claim 1 or 2, wherein said bone-related disease is selected from disorders of mineral metabolism, disorders of parathyroid hormone secretion and/or activity, metabolic bone disorders comprising osteoporosis, vitamin D related disorders, renal bone diseases, hypophosphatasia, dysplastic disorders, infiltrative disorders, extra-skeletal calcification and ossification.

5.   The method according to claim 4, wherein said bone-related disease is osteoporosis.

6.   The method according to claim 1 or 2, wherein said at least one GSK-3β inhibitor is selected from: lithium, bivalent zinc, beryllium, aloisines, hymenialdisine, indirubins, maleimides, muscarinic agonists, pyrazolo[3,4-*b*]quinoxalines,   5-aryl-pyrazolo[3,4-*b*]pyridazines,   and functional derivatives thereof.

7.   The method according to claim 5, wherein said at least one GSK-3β inhibitor is lithium.

5   8.   A method for selecting a compound useful for preventing and/or treating a bone-related disease in a mammal in need of such treatment, wherein said method comprises:

a) testing the ability of a candidate compound to inhibit GSK-3β activity *in vitro* and/or *in vivo*; and

10   b) if said candidate compound inhibits GSK-3β activity, selecting said compound.

9.   The method according to claim 8, further comprising purifying said compound.

15

10.   The method according to claim 8, wherein said mammal is a human.

11.   The method according to claim 8, wherein said bone-related

20   disease is selected from disorders of mineral metabolism, disorders of parathyroid hormone secretion and/or activity, metabolic bone disorders comprising osteoporosis, vitamin D related disorders, renal bone diseases, hypophosphatasia, dysplastic disorders, infiltrative disorders, extra-skeletal calcification and ossification.

25

12.   The method according to claim 11, wherein said bone-related disease is osteoporosis.

30

19